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September 11, 1997

BY HAND DELIVERY

Mr. William Caton
Secretary
Federal Communications Commission
1919 M Street, N.W. Room 222
Washington, D.C. 20554

Re: Supplemental Comments
MM Docket No. 93-25

Dear Mr. Caton:

Tendered herewith, on behalf of Research TV, are an original and seven copies of supplemental comments tendered in the above-referenced proceeding at the request of FCC staff.

Very truly yours,

Marcia Cranberg

Marcia Cranberg

cc (w/enc.):

Ari Fitzgerald, Esq.
Brian Carter, Esq.
Rosalee Chiara

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BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C.

In the Matter of Implementation of Section 25 of the Cable Television Consumer Protection and Competition Act of 1992 Direct Broadcast Satellite Public Service Obligations	MM Docket No. 93-25

SUPPLEMENTAL COMMENTS OF RESEARCH TV

Research TV hereby submits supplemental comments in the above-captioned proceeding in order to respond to questions raised by FCC staff in a meeting held on August 20, 1997 among representatives of Research TV and staff within the Commission's International Bureau. In addition, attached hereto is a Statement by Michael Wellings, Chief Engineer, providing information about the direct costs to uplink a noncommercial educational programming signal to a DBS satellite transponder.

I. QUANTITY OF RESEARCH TV PROGRAMMING

Research TV was asked about the amount of programming it could provide for carriage by DBS systems. While Research TV programming at present is only available through limited cable PEG channel access and a handful of low power broadcast

television stations, there is already a sufficient amount of quality Research TV original programming to fill more than one full channel for 24 hours per day.

As described in Research TV's initial and reply comments in this proceeding, Research TV is a consortium of major research universities that provides public access to research information through video technologies. Government and industry annually fund tens of billions of dollars in research at the country's major research institutions. Increasingly, information concerning that research is being made available, in video and multimedia forms, to other university researchers; businesses; health care organizations; federal, state and local governments; faculty at K-12, community colleges and other non-research educational institutions; both on- and off-campus students; and interested segments of the public.

If Research TV universities had reliable, identifiable and high-quality national distribution capability via DBS, program production would increase and Research TV would be capable of programming an even greater number of channels than at present. Even now, many research universities have video and multimedia production capabilities that are producing a regular flow of televisable video. Universities regularly record top-flight research presentations, sharing their research results with the public and with their peers, even though no substantial national distribution mechanism for providing access to these

significant presentations of cutting-edge research has ever been available.

II. COSTS OF PRODUCTION

As described below, the costs to produce Research TV programming, which extend over a wide range, are difficult to quantify.

Unlike conventional noncommercial educational video programming, the primary costs associated with, and core value of, a Research TV program is the high-quality, accurate and peer-reviewed intellectual property (e.g., the research itself) constituting the substance of the program, rather than the more cosmetic "entertainment" elements. When so measured, the average "cost" of a Research TV program can run into the millions of dollars.

In terms of pure program production, given the wide range and diversity of research and appropriate mechanisms for its accurate communication, there is a concomitant wide range of appropriate approaches, treatments and levels of production quality. This can extend from a clear and well-organized lecture with modest multimedia efforts, through complex computer-generated graphics or multicamera remote location shoots in harsh conditions. Excluding the costs of the research intellectual property, the production costs of programming can range from a few hundred dollars per hour, through hundreds of

thousands of dollars per hour, to over one million dollars per hour. While a number of programs currently in the Research TV catalogue are of lower-end broadcast TV quality, there is a very large number of production offerings of higher value, including a number of Emmy Award nominees and other award-winning programming.[1]

Two Research TV series are distributed internationally and have sold nearly 1,000 videotapes. Other Research TV programs promoted on the Web have resulted in inquiries from around the world. Research TV programs related to astronomy that have been carried on NASA-TV have regularly resulted in numerous calls and inquiries to the professors featured in the programs from colleagues and other viewers around the country, including students, teachers and members of the general public.

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[1] Even though it is has only recently begun actively entering programs in competitions, University of Washington programming alone has received four regional Emmy nominations over the past two years, competing with the work of network broadcast television affiliates. Nationally, its programming has received a number of awards, including a Cine Golden Eagle Award (a highly competitive prize which opens the door to international competition); a Bronze Apple Award from the National Educational Media Network (a widely recognized competition for educational programming); and five Bronze Telly Awards (other recipients of which have included CBS, Nickelodeon, NASA, General Motors, Microsoft and Columbia Pictures).

The University of Virginia was recognized as a finalist in the 1996 National Telly awards for its half-hour show on research and innovation, "Gateways-Deaf Culture and Hearing Research", and this year received a silver statuette in the National Telly competition for its show, "Life Giving Life". Several of its productions have also been recognized for excellence by the Council for Advancement and Support of Education.

In short, Research TV's programming is of the highest caliber, with production costs that reflect that quality.

III. NEED TO GUARANTEE ACCESS TO RESERVED CHANNEL CAPACITY BY ACCREDITED EDUCATIONAL INSTITUTIONS

As explained in Research TV's initial comments, the FCC should further the Congressional intent of affording the public access to a variety of noncommercial educational programming over DBS by requiring that a portion of the Channel 25 reserved channel capacity be programmed by accredited educational institutions. Research TV has thus proposed that a discrete segment of reserved channel capacity (one-third of the total reserved capacity, or only two percent of a DBS operator's total channel capacity, assuming the FCC requires reservation of the full seven percent of channel capacity contemplated by Section 25) be reserved specifically for use by accredited educational institutions.[2]

Congress clearly intended that the public be guaranteed access to Section 25 programming supplied by educational institutions, among other programming entities. Congress specifically stated that a fundamental purpose of the 1992 Cable

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[2] Of that block of channels, one-third each would in turn be reserved for the significant components of the accredited educational community-- K-12 institutions; research universities; and other post-secondary educational institutions. Research TV's proposal that the channel capacity reserved for use by educational institutions be limited to accredited institutions ensures that this reservation be utilized solely by bona fide educational entities.

Act was to ensure that the public receives a diverse range of programming. Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385 ("1992 Cable Act") at § 2(b)(1). To that end, Section 25 explicitly provided that DBS reserved channel capacity was to be programmed by national educational programming suppliers that included a range of categories of programming entities. One such category specifically included is "public and private educational institutions". 47 U.S.C. § 335(b)(5)(B).

To further these Congressional objectives, the FCC cannot leave to chance or unchecked DBS operator discretion the determination of the noncommercial programming the public will view on DBS reserved channel capacity. Absent a clear mandate from the FCC that accredited educational institutions be afforded access to the public on DBS reserved channel capacity, there is a significant likelihood that such institutions would not be afforded carriage at all by DBS operators.

As discussed in Research TV's reply comments, the comments submitted by the DBS industry in this proceeding demonstrate that DBS operators are most reluctant to carry programming supplied by educational institutions. The DBS industry has advocated the narrowest possible definition of channel capacity; sought to impose prohibited and excessive access costs on programmers; and argued that they may carry for-profit programmers in satisfaction of their Section 25 obligations. Clearly, DBS interests have no intention of

expanding their carriage of noncommercial educational programming beyond those educational or educational-like services that they presently carry, such as PBS, C-Span, C-Span II and the Discovery Channel. Indeed, DBS operators currently pay substantial sums of money to carry many of these services. In contrast, despite multiple efforts by Research TV to provide its programming at no charge to several DBS operators, no Research TV program has ever been afforded carriage on any DBS system in the country.

Even if the Commission were to prohibit DBS operators from carrying programming supplied by for-profit entities under Section 25, there is no reason to believe that accredited educational institutions would be selected by DBS operators to access Section 25 reserved channel capacity. As an initial matter, there is no way of knowing exactly how much noncommercial educational programming exists at present or might become available in the future. Substantial amounts of such programming might well exist or come into being, given the possibility of national distribution via DBS, thus reducing the likelihood that DBS operators would necessarily carry programming supplied by educational institutions to fill their reserved channel capacity.

Moreover, it is safe to assume that whatever the body of existing or future noncommercial educational programming, DBS operators will favor those noncommercial services they presently carry; additional programming services that may be created in

the future by PBS, C-Span or other programmers with whom DBS operators have existing relationships; and programming that might be created by non-profit subsidiaries of for-profit entities that currently are being carried by DBS, such as the Discovery Channel.[3]

Further, DBS operators naturally will seek to carry those noncommercial programming services that can be most attractively packaged as entertainment-like services.[4] These services are relatively more likely to secure access to the public through voluntary carriage by DBS on non-reserved channels, as well as by cable and local broadcast television. DBS operators should not, therefore, be permitted to carry these services on scarce

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[3] If, notwithstanding Research TV's vigorous objections and those of several other commenters in this proceeding, the FCC ultimately chooses to afford DBS operators discretion in determining what programming may be carried in satisfaction of Section 25 requirements, at the least the Commission must ensure that programming supplied by for-profit entities, as well as by non-profit subsidiaries or affiliates of for-profit entities, does not qualify as Section 25 programming.

The Commission also should recognize that even though the Satellite Home Viewer Act (47 U.S.C. § 119) does not afford DBS operators a compulsory license to retransmit PBS-affiliated television broadcast stations in the local market of another PBS affiliate, DBS operators are not prohibited from carriage of any program service that might be created by PBS; nor are they precluded from carriage of PBS affiliated stations in areas of the country that do not have local PBS affiliates. Thus, it is reasonable to assume that a significant portion of Channel 25 reserved channel capacity will be devoted to PBS programming services and/or PBS-affiliated stations.

[4] To illustrate, when it sought unsuccessfully to provide free programming to DBS operators in the past, Research TV was told by one DBS operator that Research TV might have more success in gaining carriage if it would provide programming hosted by a "celebrity" scientist such as Carl Sagan.

Channel 25 reserved channels while simultaneously denying access altogether to the exceptional material that can be provided by this nation's top educational research institutions, material that currently is virtually unavailable to the public. Such a result would fly in the face of the express requirements of the 1992 Cable Act. Reservation of discrete channel blocks for distinct categories of programmers is a simple way to avoid this prohibited result.

Finally, there is very little downside to furthering the explicit Congressional intent to ensure carriage of diverse programming, by requiring an express reservation of channel capacity for broad categories of national educational programmers, including accredited educational institutions. As described in greater detail in Research TV's comments in this proceeding, if there is insufficient programming available to fill the channel capacity reserved for any programmer category, that capacity will not be wasted. Under Research TV's proposal, the capacity could be utilized by programmers in other programming categories, whose own blocks of reserved capacity have already been filled. Moreover, should all Section 25 programmers who seek access to reserved channel capacity have sufficient such access and unprogrammed reserved channels thereafter remain, Section 25 specifically permits DBS operators to utilize those vacant channels as they see fit, until such time as additional qualifying noncommercial educational programming becomes available.

In sum, the Commission has but one opportunity to ensure that Section 25 is utilized as Congress intended -- to ensure public access to a variety of noncommercial educational programming. The Commission must affirmatively adopt regulations that will guarantee that this goal is accomplished. Reliance upon only a vague hope that the profit-motivated DBS industry will, when making programming decisions, behave in a manner that will ensure diversity, is not an acceptable method for implementing the categorical requirements of Section 25. By contrast, adoption of Research TV's proposal would ensure that programming supplied by a number of types of noncommercial educational entities, including accredited educational institutions, will all be provided to the public on DBS. At the same time, of course, DBS operators would retain full discretion to program the immense remaining channel capacity available on their systems.

Respectfully submitted,

RESEARCH TV

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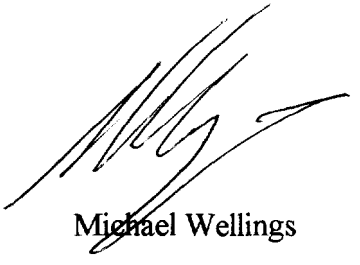
Attorneys for Research TV

September 11, 1997

DECLARATION OF MICHAEL WELLINGS

The attached is my Declaration for submission as part of the Supplemental Comments of Research TV in MM Docket No. 93-25.



Michael Wellings

September 10, 1997

STATEMENT OF MICHAEL WELLINGS

My name is Michael Wellings and I have been Chief Engineer of the University of Washington television service, UWTV, for the past three years. UWTV delivers University of Washington programming to approximately 800,000 homes across Washington State via cable television and tape delivery to cities west of the Cascade Mountains and via state-of-the-art MPEG-2 program delivery to several cities east of the Cascade Mountains. As part of my position, I am responsible for design and implementation of digital video and satellite systems. I have over 20 years of relevant experience in the communications industry.

Research TV has been requested to supply information concerning the direct costs associated with uplinking Research TV programming to DBS operators' transponders.

There are several distinct direct cost components to physically transmitting Research TV programming to DBS operator satellite transponders for distribution via DBS. First, Research TV programming would have to be "collected" from remote programming production points at different university campuses around the country. The programs would most likely be sent on tape to a single point for assembly into a Research TV programming service stream (channel).

After the programming is assembled, it must be delivered on a 24 hour per day, 7 day per week basis to the DBS operator uplink site. This is the second part of the direct cost and

would most likely be delivered via satellite uplink from the assembly site to the DBS operator site. (As shown below, Research TV thus would incur very substantial costs simply to provide its programming to the DBS uplink site.)

The third part of the cost is incurred at the DBS operator site. There would be an initial cost of acquiring equipment necessary to downlink, decode, monitor, re-encode and uplink the Research TV programming stream for national distribution. There would be continuing costs at the DBS site for operations and maintenance.

Based on my experience, and after consultation with equipment manufacturers, I estimate that the costs associated with each of these phases of direct cost would be as follows[1]:

DELIVERY OF UNIVERSITIES' PROGRAM TAPES TO SINGLE RESEARCH TV ASSEMBLY POINT	
BETA SP 60 minute tape stock	$280,000
Shipping of tapes	$75,000
Labor for quality control, logging and categorizing tapes	$105,000
TOTAL (PER YEAR)	**$460,000**

COST TO DELIVER PROGRAMMING FROM RESEARCH TV ASSEMBLY POINT TO DBS OPERATOR UPLINK SITE BY SATELLITE[2]	
Annual transponder cost	$300,000
TOTAL (PER YEAR)	**$300,000**

[1] All costs assume programming a single DBS channel 24 hours per day, 365 days per year.

[2] Assumes use of Galaxy 10, 1.8m target size receive antenna, for one MPEG2 channel.

COSTS INCURRED AT DBS OPERATOR SITE TO DOWNLINK SIGNAL AND THEN UPLINK SIGNAL TO DBS SATELLITE TRANSPONDER

ONE-TIME DBS OPERATOR HARDWARE COSTS

1.8 meter Ku TVRO (downlink receive-only earth station)	$500
Low Noise Block Downconverter[3]	$100
Integrated Receiver Descrambler[4]	$1500
Monitor	$400
Video Distribution Amplifier[5]	$250
Audio Distribution Amplifier	$250
Video MPEG2 Encoder	$55,000
Audio MPEG2 Encoder	$15,000
TOTAL COSTS TO DBS OPERATOR FOR HARDWARE (ONE-TIME)	**$73,000**

[3] An amplifier that mounts at the focus of a satellite earth station. One LNB can amplify one polarity of one satellite transponder, downconverting the block of channels to a set of frequencies easily transported over a coaxial cable to the receiver.

[4] A box device that is both a satellite receiver and descrambler. This unit receives the RF carrier via the dish and LNB, "tunes in" the channel and transforms it into recognizable video and audio.

[5] This amplifier actively splits one video line into several without affecting the quality of the signal. This allows extra lines of the signal to be hooked up to monitors, tape machines, etc.

DBS OPERATIONAL COSTS (Yearly)	
Maintenance of Equipment	$11,500[6]
Labor to maintain operation for Research TV channel	$3,000[7]
TOTAL OPERATIONAL COSTS TO DBS OPERATOR (PER YEAR)	**$14,500**

[6] Estimate assumes repair or replacement of 15 percent or slightly more of equipment annually (.15 x $73,000 cost of equipment).

[7] Estimate assumes ten percent of $30,000 annual salary of DBS technician.